GOVERNMENT OF INDIA
ATOMIC ENERGY
LOK SABHA

UNSTARRED QUESTION NO:2933
ANSWERED ON:16.12.2015
Three Stage Nuclear Power Programme
Rai Shri Prem Das

Will the Minister of ATOMIC ENERGY be pleased to state:

(a)the details of the three-stage nuclear power programme and the status of its implementation;

(b)whether there is a delay in the commissioning of the Prototype Fast Breeder Reactor and if so, the details thereof and the reasons therefor; and

(c)the time by which the above reactor is proposed to be mode operational?

Answer

THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (Dr. JITENDRA SINGH):

(a)With a view to optimally utilise limited uranium reserves and large thorium reserves in the country, the Department of Atomic Energy has adopted a three stage nuclear power programme, based on a closed nuclear fuel cycle, for generation of nuclear power and for achieving long term energy security. The three stage nuclear power programme, which is to be implemented sequentially, aims to multiply the domestically available fissile resources through the use of natural Uranium in Pressurised Heavy Water Reactors (first stage), followed by use of Plutonium obtained from the spent fuel of Pressurised Heavy Water Reactors in Fast Breeder Reactors, in the second stage. Large scale use of Thorium will subsequently follow making use of Uranium-233 that will be bred in Fast Breeder Reactors, when adequate nuclear installed capacity in the country has been built. Accordingly, the utilisation of Thorium as a practically inexhaustible energy source has been contemplated during the third stage of the Indian nuclear programme, which can be reached after a few decades. The first stage of nuclear power programme comprising of indigenous Pressurised Heavy Water Reactors (PHWRs) is in industrial domain. A Prototype Fast Breeder Reactor (PFBR) under the second stage is being constructed by Bharatiya Nabhikiya Vidyut Nigam Limited (BHAVINI) at Kalpakkam, Tamil Nadu and the same is at an advanced stage of commissioning.

(b)Yes sir. Prototype Fast Breeder Reactor (PFBR) is first of its kind in the country, conceived with the main objective of techno-economic demonstration of large fast reactors to be built in series in the country for the commercial exploitation. Accordingly, several unique features have been incorporated in the design and development stages. Manufacturing of these equipments by Indian manufacturers took considerable time. In view of first of its kind nature, several stage- wise review processes called for by the internal and external experts mainly formed by regulators are very thorough and quite long elaborate exercise.

(c)PFBR will be operational by September-2016.

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